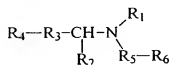


CLAIMS

1. A method for rescuing damaged nerve cells in a patient, comprising:  
 administering to a patient having damaged nerve cells an amount of a deprenyl  
 5 compound such that rescuing of damaged nerve cells occurs in the patient:  
 with the proviso that the deprenyl compound is not selected from the group consisting  
 of deprenyl, pargyline, AGN-1133, or AGN1135.

2. The method of claim 1, wherein the deprenyl compound is represented by the  
 10 structure:



in which

R<sub>1</sub> is hydrogen, alkyl, alkenyl, alkynyl, aralkyl, alkylcarbonyl, arylcarbonyl,  
 alkoxy carbonyl, or aryloxy carbonyl;

15 R<sub>2</sub> is hydrogen or alkyl;

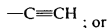
R<sub>3</sub> is a single bond, alkylene, or  $-(\text{CH}_2)_n-\text{X}-(\text{CH}_2)_m$ ;

in which X is O, S, or N-methyl; m is 1 or 2; and n is 0, 1, or 2;

R<sub>4</sub> is alkyl, alkenyl, alkynyl, heterocyclyl, aryl or aralkyl; and

R<sub>5</sub> is alkylene, alkenylene, alkynylene and alkoxylenes; and

20 R<sub>6</sub> is C<sub>3</sub>-C<sub>6</sub> cycloalkyl or



R<sub>2</sub> and R<sub>4</sub>-R<sub>3</sub> are joined to form, together with the methine to which they are  
 attached, a cyclic or polycyclic group;

and pharmaceutically acceptable salts thereof.

3. The method of claim 2, wherein  $R_1$  is a group that can be removed *in vivo*.

4. The method of claim 2, wherein  $R_1$  is hydrogen.

5. The method of claim 2, wherein  $R_1$  is alkyl.

6. The method of claim 5, wherein  $R_1$  is methyl.

7. The method of claim 2, wherein  $R_2$  is methyl.

8. The method of claim 2, wherein  $R_3$  is methylene.

9. The method of claim 2, wherein  $R_4$  is aryl.

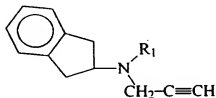
10. The method of claim 2, wherein  $R_4$  is phenyl.

11. The method of claim 2, wherein  $R_5$  is methylene.

12. The method of claim 2, wherein  $R_6$  is

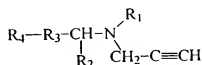


13. The method of claim 2, wherein the deprenyl compound has the structure



wherein  $R_1$  is hydrogen, alkyl, alkenyl, alkynyl, aralkyl, alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, or aryloxy carbonyl.

14. The method of claim 2, wherein the deprenyl compound is represented by the structure:



in which

$R_1$  is hydrogen, alkyl, alkenyl, alkynyl, aralkyl, alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, or aryloxy carbonyl;

10  $R_2$  is hydrogen or alkyl;

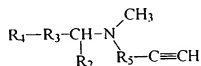
$R_3$  is a bond or methylene; and

$R_4$  is aryl or aralkyl; or

$R_2$  and  $R_4-R_3$  are joined to form, together with the methine to which they are attached, a cyclic or polycyclic group;

15 and pharmaceutically acceptable salts thereof.

15. The method of claim 2, wherein the deprenyl compound is represented by the structure:



20

in which

$R_2$  is hydrogen or alkyl;

$R_3$  is a bond or methylene; and

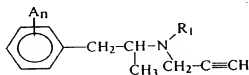
$R_4$  is aryl or aralkyl; or

$R_2$  and  $R_4$ - $R_3$  are joined to form, together with the methine to which they are attached, a cyclic or polycyclic group; and

$R_5$  is alkylene, alkenylene, alkynylene and alkoxylenes;

and pharmaceutically acceptable salts thereof.

16. The method of claim 2, wherein the deprenyl compound is represented by the structure:



in which

$R_1$  is hydrogen, alkyl, alkenyl, alkynyl, aralkyl, alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, or aryloxy carbonyl;

A is a substituent independently selected for each occurrence from the group consisting of halogen, hydroxyl, alkyl, alkoxy, cyano, nitro, amino, carboxyl,  $-CF_3$ , or azido;

n is 0 or an integer from 1 to 5;

and pharmaceutically acceptable salts thereof.

17. The method of claim 1, wherein the deprenyl compound is (-)-desmethyldeprenyl.

18. A kit comprising a container of a deprenyl compound and instructions for administering a therapeutically effective amount of the deprenyl compound to a subject having damaged nerve cells such that rescuing of damaged nerve cells occurs in the subject.